
Vivitar®

DP-1500X

Digital Projector



Digital Projector User Manual

Important Information About Your DP-1500X

Please read the following important information about your DP-1500X projector.

Important Safety Information

Warning:

- Never look into the projector lens when the lamp is switched on as the bright light can damage your eyes. Never let children look into the lens when it is on.
- Never open any covers on the projector except the lamp and filter covers. Dangerous electrical voltages inside the projector can cause severe injury. Except as specifically directed in this Instruction Manual, do not attempt to service this product yourself.
- Refer all service to qualified service personnel.
- Keep the plastic packing materials (from the projector, accessories and optional parts) out of the reach of children as these bags may result in death by suffocation. Be particularly careful around small children.

Caution:

When you replace the projector lamp, never touch the new bulb with your bare hands. The invisible residue left by the oil on your hands may be shorten the bulb life. Use a cloth or gloves to handle the new bulb.

Safety Instructions

Always follow these safety instructions when setting up and using the projector:

1. Do not place the projector on an unstable stand or table.
 2. Do not use the projector near water or sources of heat.
 3. Use accessories only as recommended.
 4. Use the type of power source indicated on the projector.
 - If you are not sure of the type of power available, consult your dealer.
 5. Insert the projector's three-pin plug into a properly grounded socket.
 6. Do not handle the plug or projector with wet hands.
 7. Always take the following precautions when handling the plug. Failure to do so may result in shock, damage, or fire.
 - Ensure the plug is free of dust before inserting it into a socket.
 - Ensure that the plug is inserted into the socket securely.
 8. Do not overload wall sockets, extension cords, or power strips as this may cause fire or electric shock.
 9. Do not place the projector where the cord can be stepped on as this may result in fraying or damage to the lead or the plug. Be alert to tripping hazard.
 10. Unplug the projector from the wall socket before cleaning. Use a damp cloth for cleaning the exterior of the projector. Do not use liquid or aerosol cleaners.
- Ocular Hazards -
11. Never look directly into the projector lamp when it is on.
 12. Do not position the projector to point directly into an audience.
 13. Do not point the laser pointer at anyone, especially near their eyes.

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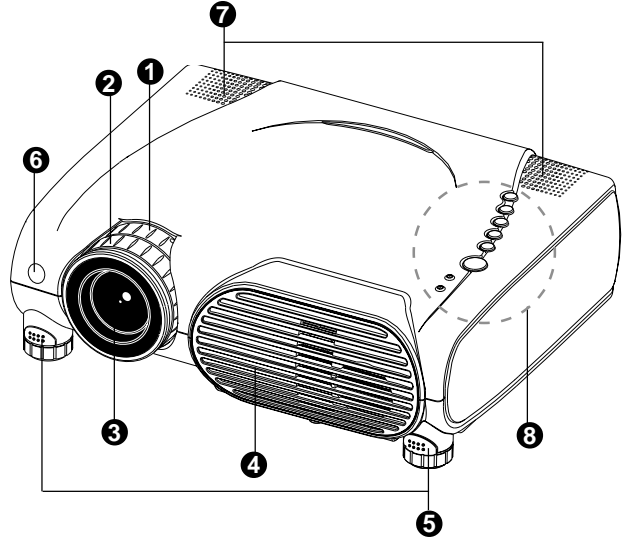
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Projector Features and Controls

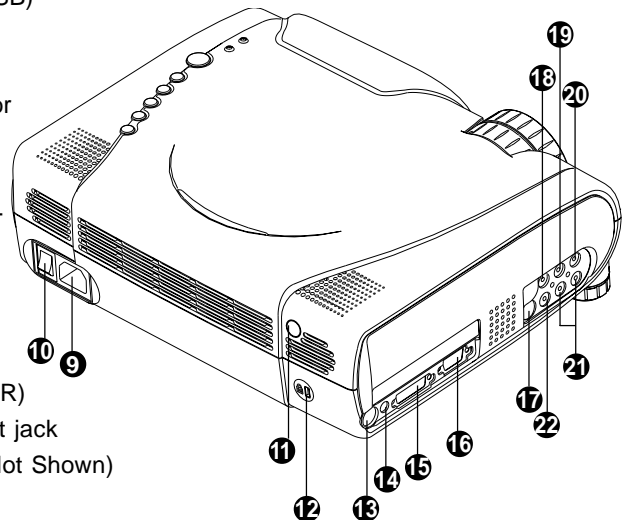
Projector

1. Zoom ring
2. Focus ring
3. Lens
4. Ventilation slots (exhaust)
5. Height Adjustment
6. Front IR remote control sensor
7. Speakers
8. Control Panel including **Lamp Power** button
9. AC power socket
10. Main Power Switch
11. Rear IR remote control sensor
12. Security lock receptacle
13. Control port (PS2 & USB)
14. Audio IN connector
15. DVI connector
16. Computer IN connector
17. S-video input



Component Video Inputs -

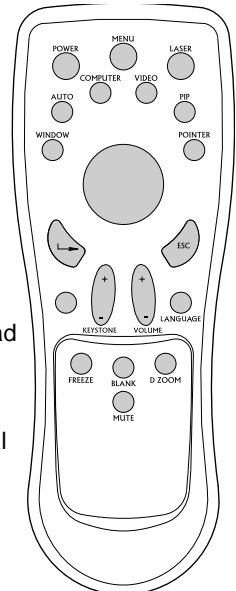
18. Y jack
19. Cb jack
20. Cr jack
21. Audio input jacks (L & R)
22. Composite Video input jack
23. Projector Lens Cap (Not Shown)



Remote Control

Button Function

POWER	Turns the projector and lamp On and OFF
MENU	Displays (or hides) the on-screen control menus
LASER	Fires laser pointer (press and hold)
WINDOW	Adjusts Window size while in PIP mode
AUTO	Automatically adjusts frequency and phase (To adjust manually - press enter, Menu/Computer/Tracking, Sync, PosiH, PosiV to fine tune.)
COMPUTER	Selects computer input signal (computer, DVI, or HDTV)
VIDEO	Selects video input signal (YCbCr, S-Video, Video)
PIP	Picture-in-Picture: displays a second image window
POINTER	Displays pointer icon on the screen
→	Confirms the current setting
ESC	Deselects the current setting and exits a menu
KEYSTONE	Adjusts trapezoidal distortion of the projection that may occur depending on the horizontal projection angle
VOLUME	Adjusts the volume of the projectors speakers
FREEZE	Freezes the current graphics and video image on the screen
BLANK	Cuts off the screen temporarily
D ZOOM	Digitally zooms the current image window
MUTE	Temporarily cuts-off the projector speakers
LANGUAGE	Selects the desired OSD (On-Screen Display) language
THUMB PAD	The thumb pad is a thumb-activated navigational controller. It acts like a small joystick or game controller. Pressing the pad forward or backward allows you to navigate up and down the projector menus. If your projector is equipped with an optional mouse link cable, the controller pad will function as a remote mouse for your PC.



Setup

This section tells you how to unpack, set up, and connect your projector to other equipment. The projector must be connected to a computer or a video source such as a video tape deck, camcorder, digital camera or notebook computer in order to make a projection. You may connect multiple sources to the projector such as a computer and a video source. You may also connect a computer mouse to use as a controller. Audio may be provided for one, or both, image sources. The audio source can be a computer, a channel of your video source, or another device such as a stereo.

Unpacking the Projector

When you unpack the projector, make sure you have all these components:

- Projector
- Projector carrying case
- Remote Controller (IR)
- 2 AAA batteries for the Controller
- Power cord
- Computer cable
- S-Video cable
- A/V composite cable (RCA type for composite video and audio)
- Lens cap
- Instruction manual

(The following cables are optional accessories)

- Audio cable
- HDTV to D-Sub (When using HDTV as input signal)
- Mouse cable (for PS/2)
- Mouse cable (for USB)
- DVI cable
- Component Video cable

Many of the above optional items may not be required for your particular installation. Retain packaging materials in case you need to move or ship the projector in the future. It should always be transported in its original protective packaging.

Connecting to a Computer

The projector will always project at XGA (1024 x 768) resolution. (XGA is the native resolution of the projector.) However, you can connect the projector to a computer source capable of displaying VGA (640 x 480), SVGA (800 x 600), XGA, or SXGA (1280 x 1024) resolutions. The projector will resize VGA, SVGA, and SXGA inputs for XGA projection. The types of computers supported by this projector include:

- IBM compatible laptop, notebook or desktop PCs (PC compatibles)
- Macintosh desktop computers (including Quadra®, Centris®, and Power Mac (with separate Sync: RGB HV), and Apple PowerBooks with video-out capability, including all 160, 165, 180 and 500 series PowerBooks (separate Sync: RGB HV)

Connecting to a Video Source

You can connect the projector to almost any common video source - VHS player, DVD player, camcorder, laser disc player or any other compatible video image source. The projector can accept composite, component, or S-Video signals. Composite video is characterized by a single-pin "RCA-type" video jack, usually colored yellow. Component video (YCbCr) is less common and features three "RCA-type" video jacks, typically colored red, green, and blue. S-Video is readily identified by a single connector with four small pins.

You can connect the projector simultaneously to composite, component, and S-Video sources. You can select which video source to project using the control panel or remote controller. If the Auto Search feature is ON (see later sections of this manual), the projector will automatically detect and select a source. The projector supports both NTSC and PAL video formats. The projector will automatically detect and identify the video format. Note, however, whereas the projector can accept multiple simultaneous sources it can only accept one video format at a time.

Each of the three video types require their respective cable. Composite video and S-Video cables are normally provided with the projector. If not, they are readily available at electronics stores and are commonly included with each video source device. For component-video (YCbCr), use the RCA-type triple cable that came with the video source. Finally, connect your video source to the projector using the appropriate cable.

Note: *The projector is not compatible with a cable TV-style coaxial "F" connector.*

Focusing and Sizing the Projected Image

When the projected image appears on the screen, adjust the focus and size:

- To adjust the focus, rotate the focus ring, which is the outer ring on the projector lens (Page 6, item 2)
- To adjust the size of the image, rotate the zoom ring (Page 6, item 1); zooming out to make the image larger or zooming in make it smaller on the screen

Operational Indicators (LEDs)

There are two LEDs on the top of the projector; the POWER LED and the LAMP LED. They provide valuable information about the projector:

LED	COLOR	STATUS	MEANING
Power	Green	Solid	The projector is powered and ready
Power	Red	Flashing	There is a problem with the projector fan - the projector cannot start up
Power	Red	Solid	When Main Power is turned on - 1 second
Lamp	Green	Solid	The lamp is in good condition and is projecting at maximum brightness
Lamp	Green	Flashing	The lamp is close to its end of life, but the lamp is still operational
Lamp	Red	Solid	The lamp has reached its end of life and must be changed soon. The lamp will continue to operate until it fails. Change the lamp and reset the lamp time-counter.
Lamp	Orange/ Yellow	Flashing	The projector is shutting down. The fan motor is cooling the lamp for shutdown. Do not unplug the power cable or turn the power (rocker) switch Off before the Lamp LED turns off. The fan motor will turn off when the lamp has cooled.

To change a menu setting using the **Projector Control Panel**:

1. Press the MENU button to invoke the Main Menu. Note: press MENU once again to hide the menu - acting like the ESC button on the remote controller.
2. Press the SELECT button to scroll through the menu tree - like the controller button on the remote controller
3. To change a specific setting, use the + or – buttons (Keystone buttons)
4. Press the SELECT button to confirm your selection
5. Press the MENU button to back out of the menu tree

Dedicated Function Buttons for Keystone, Mute, and Volume -

If the Main Menu is NOT currently displayed on the screen, then -

- On the Remote controller: use the – or + buttons for volume and keystone
- On the Projector Control Panel: use the – or + buttons for keystone

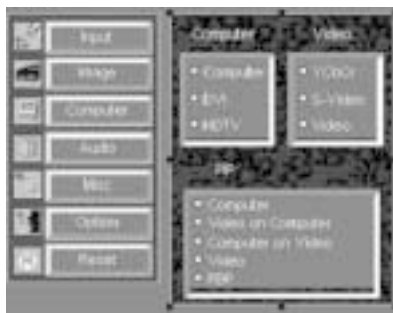
Menu Options - Detailed Description

The following menus are described in this section in detail:

Input Image Computer Audio Misc Option Reset

Input Menu:

The Input menu allows you to specify the signal source that you wish to project. This is particularly useful if you have several sources (video and/or computer) connected to your projector.



1. Press the MENU button
2. Use the Remote Control thumb pad, or the SELECT button to select the **Input** Menu. Once Input Menu is highlighted press the ENTER button.
3. Use either the thumb pad or the SELECT button to choose a sub-menu: Computer, Video, or PIP. The following table details the available sub menus:

Menu	Sub-menu	Description
Computer		Computer input signal
	Computer	Signal from computer (desktop or notebook)
	DVI	Signal from DVI (Digital Video Interface) device
	HDTV	Signal from HDTV (High Definition TV - a high-resolution TV standard, which is part of the group of digital TV standards introduced in USA in late 1998)
Video		Video input signal
	YCbCr	Component video signal
	S-Video	S-Video signal
	Video	Composite video signal
PIP		Displays additional image window on-screen
	Computer	Computer display only
	Video on Computer	Place a small video window in the foreground with the computer display in the background
	Computer on Video	Place a small computer window in the foreground with the video display in the background.
	Video	Video display only.
	PBP	Computer and video is displayed side-by-side

PBP: Picture by Picture

4. Use the – or + buttons to select the desired feature in the sub-menus
5. Press the ESC button (Remote Controller) or the MENU button (Projector Control Panel) to exit from current menus

Image Menu

The image menu, and sub menus, provide precise control of the projected image including: brightness, contrast, intensity, saturation, sharpness (computer signal), sharpness (video signal), tint, gamma (computer signal), gamma (video signal), and color channel balancing (Y, R, G, B).

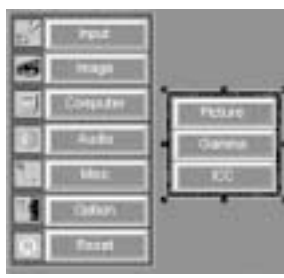
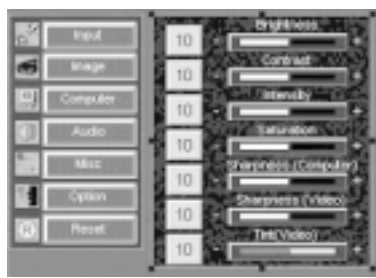
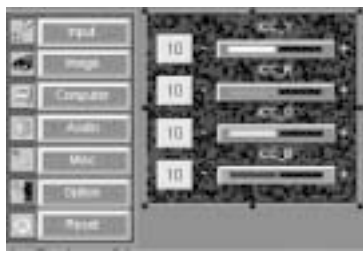


Image Main Menu



Picture Sub-menu



Independent Color Control (ICC) Sub-menu



Gamma Sub-menu

1. Press the MENU button
2. Use the thumb pad or SELECT button to select the **Image** Menu. Once the Image Menu is highlighted, press the ENTER button.
3. Use the thumb pad or SELECT button again to choose from the **Picture**, **Gamma**, or **ICC** sub-menus. Highlight the submenu of choice and press ENTER.

The following table provides detail of the available sub menu choices:

Menu	Sub-menu	Description
Picture		Adjusts the properties of the projected image
	Brightness	The higher the setting, the brighter the projection The lower the setting, the darker the projection
	Contrast	The higher the setting, the greater the contrast The lower the setting, the lower the contrast
	Intensity	The amount of white contained in a color The higher the setting, the whiter the image The lower the setting, the less white the image
	Saturation	The strength of a color especially the degree to which it lacks its complimentary color The higher the setting, the stronger the color strength The lower the setting, the weaker the color strength
	Sharpness (Computer)	The higher the setting, the sharper the computer's projection. The lower the setting, the softer the computer's projection.
	Sharpness (Video)	The higher the setting, the sharper the video's projection. The lower the setting, the softer the video's projection.
	Tint (Video)	Adjusts the projection between red and green color
Gamma		Selects a gamma correction curve
	Gamma1	Preset gamma curve
	Gamma2	Natural tones (HDTV)
	Text	Contrasts black and white. Suitable for images that are predominantly text
ICC		Adjusts ICC (Independent Color Control)
	ICC_Y	Adjusts yellow
	ICC_R	Adjusts red
	ICC_G	Adjusts green
	ICC_B	Adjusts blue

4. Use the – or + buttons to adjust the desired display attribute in the sub-menus
5. Press the ESC button (Remote Controller) or the MENU button (Projector Control Panel) to exit from current menus

Computer Menu

The computer menu is used for fine tuning the synchronization between the projector and a computer input signal. If you are experiencing difficulty synchronizing the projector with your computer this feature may help to optimize the interface.



1. Press the MENU button
2. Use the thumb pad or SELECT button to select the **Computer** Menu. Once the **Computer** Menu is highlighted, press the ENTER button.
3. Use the thumb pad or SELECT button again to choose from the **Tracking**, **Sync**, or **Position** sub-menus. Highlight the submenu of choice and press ENTER.

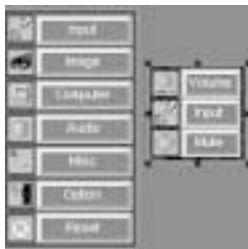
The following table provides detail of the available sub menu choices:

Menu	Description
Tracking	Adjusts horizontal tracking
Sync	Adjusts the dot phase of the input signal Adjusts the picture to where it looks best
PosiH	Adjusts the horizontal position
PosiV	Adjusts the vertical position

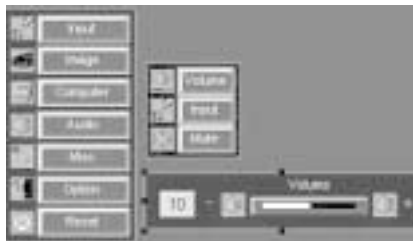
4. Use the – or + buttons to adjust the desired display attribute in the sub-menus
5. Press the ESC button (Remote Controller) or the MENU button (Projector Control Panel) to exit from current menus.

Audio Menu

The Audio menu allows you to control volume, specify an input source, and mute the audio completely.



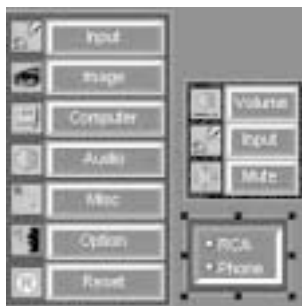
Audio Main Menu



Volume Sub-menu



Mute Sub-menu



Input Sub-menu

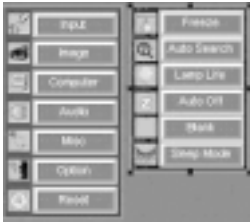
1. Press the MENU button
2. Use the thumb pad or SELECT button to select the **Audio** Menu. Once the **Audio** Menu is highlighted, press the ENTER button.
3. Use the thumb pad or SELECT button again to choose from the **Volume**, **Input**, or **Mute** sub-menus. Highlight the submenu of choice and press ENTER.

Menu	Description
Volume	Adjust the volume up or down
Input	Specify an audio source - RCA or phone (jack) input
Mute	Cuts off the sound temporarily

4. Use the – or + buttons to adjust the desired display attribute in the sub-menus
5. Press the ESC button (Remote Controller) or the MENU button (Projector Control Panel) to exit from current menus.

Misc Menu

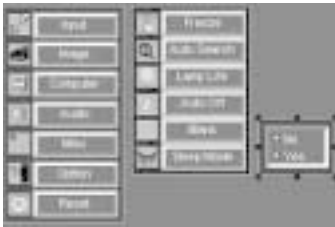
The Misc menus include projector utilities for freeze frame, auto search (on/off), lamp life (counter), auto off time (on/off), and sleep mode settings.



Misc Main Menu



Freeze Sub-menu



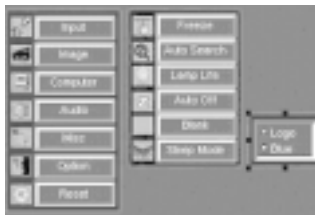
Auto Search Sub-menu



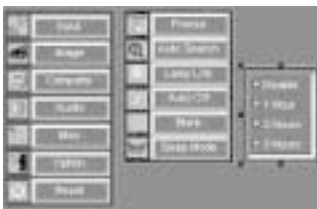
Lamp Life Sub-menu



Auto Off Sub-menu



Blank Sub-menu (inactive)



Sleep Sub-menu

1. Press the MENU button
2. Use the thumb pad or SELECT button to select the **Misc** Menu. Once the **Misc** Menu is highlighted, press the ENTER button.
3. Use the thumb pad or SELECT button again to choose from the various sub-menus. Highlight the submenu of choice and press ENTER.

The following table provides detail of the available sub menu choices:

Menu	Sub-menu	Description
Freeze		Freezes the screen
Auto Search		Automatically scans for input signal sources
Lamp Life		Displays the lamp's lifetime counter/clock
Auto Off		Automatically turns off the lamp if the projector does not detect an input signal for specified time period
Blank		Blanks the screen temporarily
Sleep Mode		Automatically turns off the projector lamp after a specified time period (even if a source is present)
	Disable	Sleep mode is not active
	1 Hour	Automatically turns off lamp after one hour
	2 Hours	Automatically turns off lamp after two hours
	3 Hours	Automatically turns off lamp after three hours

4. Use the – or + buttons to adjust the desired display attribute in the sub-menus
5. Press the ESC button (Remote Controller) or the MENU button (Projector Control Panel) to exit from current menus.

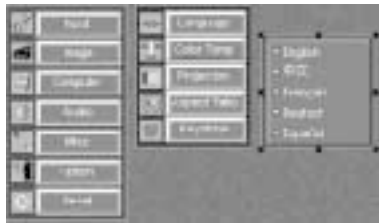
Note: The Blank function will only Blank to a blue screen. “Logo” has not been implemented

Option Menu

The Option menus include projector utilities for OSD language, color temperature, projection mode, aspect ratio, and keystone correction.



Option Main Menu



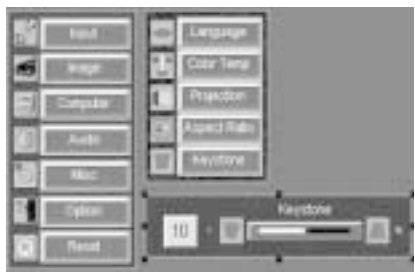
Language Sub-menu



Color Temp Sub-menu



Projection Sub-menu



Keystone Sub-menu



Aspect Ratio Sub-menu

1. Press the MENU button
2. Use the thumb pad or SELECT button to select the **Option** Menu. Once the **Option** Menu is highlighted, press the ENTER button.
3. Use the thumb pad or SELECT button again to choose from the various sub-menus. Highlight the submenu of choice and press ENTER.

The following table provides detail of the available sub menu choices:

Menu	Sub-menu	Description
Language		OSD (On screen Display) Language
	English	Selects English as OSD language
	Chinese	Selects Chinese as OSD language
	French	Selects French as OSD language
	German	Selects German as OSD language
	Spanish	Selects Spanish as OSD language
Color Temp		Adjusts color temperature
	User defined	User can manually change this setting
	Low (Preset)	Gives white colors a red tint
	Middle (Preset)	Gives white colors a neutral tint
	High (Preset)	Gives white colors a blue tint
Projection		Sets the projection display mode
	Rear	The projection is reversed horizontally
	Ceiling	The projection is inverted vertically
Aspect Ratio		HDTV and video display selection
	4/3	Selects 4:3 aspect ratio
	16/9	Selects 16:9 aspect ratio
Keystone		Adjusts trapezoidal distortion of the picture that may occur depending on the horizontal projection angle

4. Use the – or + buttons to adjust the desired display attribute in the sub-menus
5. Press the ESC button (Remote Controller) or the MENU button (Projector Control Panel) to exit from current menus.

Reset Menu

The Reset menu allows you to restore all projector settings and adjustments back to the factory defaults.



1. Press the MENU button
2. Use the thumb pad or SELECT button to select the **Reset** Menu. Once the **Reset** Menu is highlighted, press the ENTER button.

The following table provides detail of the available choices:

Menu	Description
No	Maintains the existing settings
Yes	Returns to default settings

3. Press ESC button, if you want to exit from this menu

Maintenance

The projector requires little maintenance. You should keep the lens clean as dust, dirt, or spots will project on the screen and diminish image quality.

You will also need to clean the air filter located at the bottom of the projector periodically. It is important to keep the air filter clean because a clogged air filter prevents proper ventilation which is necessary to cool the projector and prevent it from overheating. The only parts you should replace yourself are the lamp and the air filter. If any other parts need replacement, contact your Vivitar dealer or qualified service personnel. When cleaning any part of the projector, always switch off and unplug the projector first.

Warning:

Never open any of the projector panels except the lamp and air filter covers. Dangerous electrical voltages inside the projector can cause severe injury. Except as specifically indicated in this Instruction Manual, do not attempt to service this product yourself. Refer all servicing to qualified service personnel.

Cleaning the Lens

Clean the lens whenever you notice dirt or dust on the surface. Wipe the lens surface gently with a soft, dry, lint-free cloth.

To remove dirt or stains on the lens, moisten a soft cloth with water and a neutral detergent and gently wipe the lens surface.

Cleaning the Projector Housing

To clean the projector housing, first unplug the power cable. To remove dirt or dust, wipe the casing with a soft, dry, lint-free cloth. To remove stubborn dirt or stains, moisten a soft cloth with water and a neutral detergent, then wipe the casing. Do not use alcohol, benzene, thinners or other chemical detergents, as these can cause damage to the casing.

Cleaning the Air Filter

The air filter, which is located at the bottom of the projector, should be cleaned after every 100 hours of use. If it is not cleaned periodically, it can become clogged with dust and prevent the projector from being ventilated properly. This can cause overheating and damage the projector.

To clean the air filter:

1. Switch the projector off and unplug the power cable from the wall socket.
2. Turn the projector upside down so that the filter is easily accessible.
3. Note the release latch that retains the filter panel. Slide to release.

Caution:

To clean the filter, you are advised to use a small vacuum cleaner designed for computers and other office equipment. If the dirt is difficult to remove or if the filter is torn, replace it. A replacement air filter is provided with replacement lamps.

4. Replace the filter panel door and plug the power cable back into the projector.

Replacing the Lamp

The projector lamp typically lasts for about 2000 hours of use. It is time to replace the lamp when:

- The projected image gets darker or starts to deteriorate
- The projection lamp indicator LED turns to red (See page 14)

Caution:

The projector lamp develops high heat and high pressure during use. If the lamp (bulb) ruptures, burns may result. To avoid serious injury, before attempting to replace the lamp, remove the power cord plug from the outlet and wait for the lamp (bulb) to cool (wait at least one hour). Then proceed to replace lamp.

1. Turn off the projector and unplug the power cable.
2. Turn the projector over so you can access the lamp cover.
3. Remove the two access panel screws and open the panel.
4. Grasp the lamp handle and pull the lamp assembly directly out of the projector.
5. Insert the new lamp assembly - making sure not to touch the optical surfaces with your fingers. Lint-free gloves or finger cots are recommended.

Technical Specifications

(Specifications are subject to change without notice)

Image Brightness	1800 Lumen (Typical)	
Contrast	400 : 1 (B/W)	
Uniformity	80%	
Image Diagonal	40 ~ 300 inch	
Projection distance	1.64 ~ 16.35 m	
Projection Modes	Front, Rear, Ceiling	
Fan noise in dB	< 40 dB	
Integrated loudspeaker	1 Watt x 2	
Scanning Frequency	Horizontal Freq.	15 ~ 91 KHz
	Vertical Freq.	50 ~ 85 Hz
	Pixel Rate	12 ~ 157 MHz
	Pixel Rate	25 ~ 94 MHz (DVI)
Keystone correction	+/-15 degree	
PIP	Graphics window on video background Video window on graphics background Separate graphics and video windows with arbitrary size and position	
Analog RGB input (input signal)	D-sub & DVI Connector	
HDTV Display	480p(60Hz), 720p(60Hz), 1080i(30Hz)	
Video Input Formats	NTSC, PAL	
Input Signal:	Composite:1.0 Vp-p/75 Ω	
* Compatibility	S-Video: Y: 1.0 Vp-p / 75 Ω	
* Video Signal	C: 0.286 Vp-p / 75 Ω	
* Speaker signal	Component: Y: 1.0 Vp-p / 75 Ω Cb,Cr:0.286 Vp-p/75 Ω 500mVrms / 47 K Ω	
Mouse control	PS2 , USB	
OSD Language	Chinese,English,French,German,Spanish	
Operational range	5 - 35 degrees C ; 35 - 85% Relative Humidity	
Certifications	UL, CE ,FCC	
Voltage	100 ~ 240 V , 50 ~ 60 Hz	
Power Consumption	About 210 W	
Dimensions (H*W*D)	297mm x 248mm x 96 mm	
Weight	3.6 KG	

APPENDIX A

Preset Signals

Preset signal		fH (kHz)	fV (Hz)	Sync	Size
Video 60 Hz		15.734	59.940	S on G/Y or Composite Sync	
Video 50 Hz		15.625	50.000		
Component 60 Hz		15.734	59.940		
Component 50 Hz		15.625	50.000		
640x350	VGA 50 Hz	31.469	50.030	H(+), V(-)	800
	VGA 60 Hz	31.469	59.941	H(+), V(-)	800
	VGA mode 1	31.469	70.086	H(+), V(-)	800
	VGA VESA 85 Hz	37.861	85.080	H(+), V(-)	832
640x400	VGA 50 Hz	31.469	50.030	H(-), V(+)	800
	VGA 60 Hz	31.469	59.941	H(-), V(+)	800
	PC-9801 Normal	24.823	56.416	H(-), V(-)	848
720x400	VGA mode 2	31.500	70.087	H(-), V(+)	900
	VGA VESA 85 Hz	37.927	85.038	H(-), V(+)	936
640x480	VGA mode 3	31.469	59.940	H(-), V(-)	800
	Macintosh 13"	35.000	66.667	H(-), V(-)	864
	VGA VESA 72 Hz	37.861	72.809	H(-), V(-)	832
	VGA VESA 75 Hz	37.500	75.000	H(-), V(-)	840
	VGA VESA 85 Hz	43.269	85.008	H(-), V(-)	832
800x600	SVGA VESA 56 Hz	35.156	56.250	H(+), V(+)	1024
	SVGA VESA 60 Hz	37.879	60.317	H(+), V(+)	1056
	SVGA VESA 72 Hz	48.077	72.188	H(+), V(+)	1040
	SVGA VESA 75 Hz	46.875	75.000	H(+), V(+)	1056
	SVGA VESA 85 Hz	53.674	85.061	H(+), V(+)	1048
832x624	Macintosh 16"	49.724	74.550	H(-), V(-)	1152
1024x768	XGA VESA 60 Hz	48.363	60.004	H(-), V(-)	1344
	Macintosh 19"	48.192	59.278	H(-), V(-)	1328
	XGA VESA 70 Hz	56.476	70.069	H(-), V(-)	1328
	XGA VESA 75 Hz	60.023	75.029	H(+), V(+)	1312
	Macintosh 19"	60.241	74.927	H(-), V(-)	1328
	XGA VESA 85 Hz	68.677	84.997	H(+), V(+)	1376

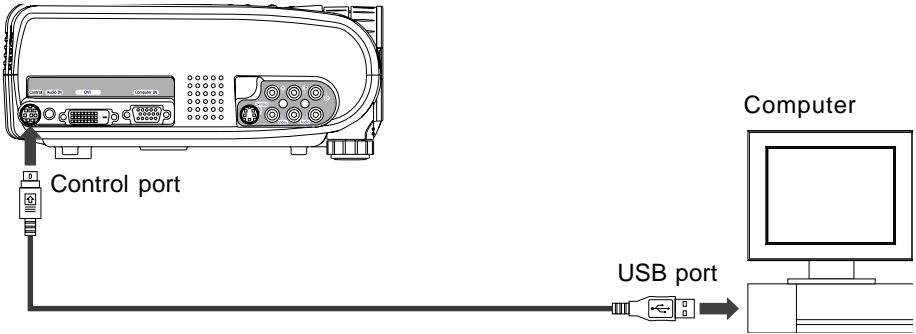
1152x864	SXGA VESA 70 Hz	63.995	70.016	H(+), V(+)	1472
	SXGA VESA 75 Hz	67.500	75.000	H(+), V(+)	1600
	SXGA VESA 85 Hz	77.487	85.057	H(+), V(+)	1568
1152x870	Macintosh 21"	68.681	75.062	H(-), V(-)	1456
1152x900	Sunmicro LO	61.795	65.960	H(-), V(-)	1504
	Sunmicro HI	71.713	76.047	H(-), V(-)	1472
1280x960	SXGA VESA 60 Hz	60.000	60.000	H(+), V(+)	1800
	SXGA VESA 75 Hz	75.000	75.000	H(+), V(+)	1680
	SXGA VESA 85 Hz	77.094	85.002	H(+), V(+)	1728
1280x1024	SXGA VESA 60 Hz	63.981	60.020	H(+), V(+)	1688
	SXGA VESA 75 Hz	79.976	75.025	H(+), V(+)	1688
	SXGA VESA 85 Hz	91.146	85.024	H(+), V(+)	1728

HDTV Preset Signals

Preset Signals	Horizontal Active Pixel	Vertical Active Pixel	fH(kHz)	fV(Hz)
480p	640	480	31.469	59.940
720p	1280	720	45.000	60.000
1080i	1920	1080	33.716	29.970

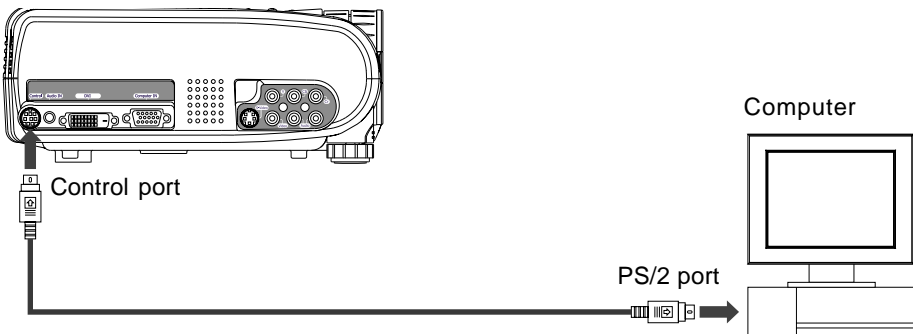
Mouse cable (for USB)

Projector



Mouse cable (for PS/2)

Projector





2

